



Glowsworth Power Projects

(A DIVISION OF GLOWSWORTH ENGINEERING LTD)

Glowsworth Power Projects is a division of **Glowsworth Engineering Ltd**, that is responsible for the [IPP]'s design, supply, installation, erection, commissioning and operations & maintenance of renewable energy power plants, Dual Fuel, Bi-Fuel, Multi-Fuels and Conversion of Diesel Generator Power Plants, Bi-fuel, Bio fuel, multiple fuel fired gas generator plant, and Gas Turbines Power Plant, to be constructed, on a "turn-key" basis.

Glowsworth Power Projects engineers are committed to developing power engineering solutions to meet our **Clients'** most complex power requirements.

Engineering disciplines include: civil, electrical, mechanical, instrumentation & control, piping and structural engineering; as well as advanced specialties in gas powered electric generator, solar powered plants, wind turbines, steam turbines, gas turbines, also on design and installation such as simulation, enterprise integration, integrated automation processes and interactive 3D and 4D modeling.

Glowsworth Power Projects Collaborates with their client counterparts to develop integrated solutions that may include engineering, procurement, fabrication, erection, construction (**EPFC**), installation test & commissioning, maintenance and project management. From the earliest stages of project design, we involve the construction and commissioning teams to provide capital and schedule efficiencies.

We are a company that supply and develops Independent Power Projects systems and solutions for the automation and operations of [Natural gas, CNG, Bio-Fuel, Dual-Fuel, Diesel-Natural Gas Conversion Kit Systems] gas powered generator power plants and industrial gas turbines.

Our determination to provide quality products and services has given us a reputation as a company that can deliver on their promises.

Together with our international partners we provide service, advice and support on issues relating to gas generators, gas turbines. With more than a decade of experience in this field we make for a reliable and experienced partner for your business.

a) Part-I – **Glowsworth Power Projects** shall provide a brief description of the mode of power generation facility and the information sought for by customers

PRIVATE RESIDENTIALS ESTATES, PRIVATE & PUBLIC COMPANIES, GOVERNMENT OFFICES & RESIDENTIALS ACCOMMODATIONS' Power Generations and Energy Supplies to the offices units in the.

b) Part-II - **Glowsworth Power Projects** shall provide sales information on Technical Specification for Setting up Gas Powered Generator Plants of up to 48 MW capacity.

Glowsworth Power Projects employs almost experience engineers and technicians, With over two decades of experience encompassing a variety of gas applications and climatic conditions, **Glowsworth Power Projects** is a world leader when it comes to the design, installation, project management, commissioning and long term maintenance of diesel and gas engines in power generation and co-generation applications.

PROJECT MANAGEMENT PHILOSOPHY

Glowsworth Engineering Limited uses an ISO9001 approved system for the management, design and construction of a project essential in providing an outcome consistent with the long-term objectives of our Customers and their project requirements.

Every project, whether a single engine sale or a turnkey installation, is allocated a dedicated **Project Manager**.

From design to commissioning and hand-over, the Project Manager works to ensure all project installation and contractual matters are managed to specification and on time.

Utilizing the wealth of experience and quality of engineering and project staff that **Glowsworth Power Projects** has in-house, combined with successful delivery of many similar projects; we strongly believe we are best placed to not only deliver a successful, economic, safe and reliable outcome, but to also truly understand your project requirements and deliverables.

Upon receipt of an official order for this project, **Glowsworth Power Projects** would produce a **Project Management Plan**

(**PMP**). This **PMP** will address the requirements for the total project, from initiation of the contract to completion and successful handover of all activities.

The **PMP** will specify the requirements and procedures to be followed internally for: the production of contract programme, cost control and tracking, site specific safety and environmental management plan and convergence of the Principal Contractor's own safety plan, contractors induction requirements, job safety analyses, reporting on site safety, production of work method statements, induction procedures, quality assurance including inspection and test plans and non-conformance reports.

The **PMP** will be the master implementation document by which the contract will be executed by **Glowsworth Power Projects** and adherence thereto will be mandatory by all personnel (under the control of **Glowsworth Power Projects**) involved in the project. This document will assist our clients in understanding the culture within Glowsworth Engineering, which typifies our successful approach to contract execution.

Our implementation of systems for this project will be specific to the task and will clearly identify the required procedures and methods to be employed.

Upon contract award, the project team under the leadership of the Project Manager, the team will identify the design needs, prepare a design plan and allocate tasks to design engineers. The

Engineering Manager will be responsible for the overall co-ordination and supervision of the design engineers to achieve the design objectives.

Glowsworth Power Projects would also carry out its own internal project risk review, to identify risks and manage those risks.

When applicable, site establishment would take place as soon as site is available, with facilities located within the proposed Power House compound. Lay down and storage areas, site access and intra site movement routes will be identified in consultation with the Principal Contractor and boundaries defined Site personnel inductions would be conducted prior to entering site, in accordance with the Principal Contractor's induction requirements.

Design and documentation systems would be set up upon receipt of order. A project initiation meeting with the main parties would follow to identify any Client specific administrative procedures.

The project programme would then be refined to take account any post tender agreements.

Day to day operational control and client liaison would be a priority, such that any potential client required scope change could be incorporated with a minimum of disruption to the contract schedule.

Management, safety, quality assurance, environmental aspects, site facilities and resources are described elsewhere in this tender. These issues are also incorporated in the PMP.

A **Glowsworth Power Projects** Site Manager would oversee all on-site work to ensure compliance with the project drawings and specifications. He would undertake the day-to-day management of all site activities and he would be on site from commencement of works through to final commissioning of the works.

Installation and Commissioning Engineers and Supervisors will be on site as required to ensure the plant is correctly installed and put into operation.

Steel and pipe fabrications would be performed off site with deliveries scheduled as required to meet the programme.

Only critical pieces will be site welded as required to maintain correctness.

Glowsworth Power Projects would prepare and submit progress reports on a monthly basis.

We believe the above all contributes to having a successful formula that **Glowsworth Power Projects** have developed and proven with other major Clients around Nigeria. With the dedication of the **PMP** at the start of the project, this sets the overtone for the rest of the project to follow and will ensure a successful outcome for all parties involved. engineering & Design From the outset of a project, feasibility and application concept design can be undertaken to evaluate any power generation/cogeneration scheme. Site visits and surveys are carried out and a report generated to determine if a scheme is viable and to determine the overall benefits.

INTRODUCTION

On this 21st century, globalization and industrializations are growing at the fastest rate, the demand of power is absolutely very crucial.

To fulfill the power demand, Federal, State Governments, countries, nations, Industries, Housing Estate, individuals, are finding their way to solve their power requirement through various power generations means such as gas powered electric generator, wind energy, thermal energy, gas turbine, nuclear energy, geothermal energy, solar energy, renewable energy, hydro power energy and so on.

To choose and utilize such source of energy there are a lot of barriers such as environmental issues, fuel and energy sources, financial, political, etc these are the barriers hindering easy access to uninterrupted power supply.

The gas powered generator power plant is one of the best methods of extracting electrical power, the advantage of the gas powered generator power plant is that the power plant can run on variety of fuel, and its exhaust heat can be converted for usage in CHP- Combined Heat Power [thermal] generation system, the exhaust heat can also be useful in chiller absorption cooling system, for offices and residential accommodation, limited factors are source of fuel energy for the gas powered generator power plant, while it is the best efficient power plant system.

1.1. ELECTRICAL POWER

The electrical power required for the gas powered generator power plant would be installed by Glowsworth Engineering Ltd by setting up a Gas Powered Electric Generator Plants of suitable capacity, the details of which shall be furnished in this proposal document.

By far the Glowsworth Power Projects shall provide the Gas Powered Electric Generator Plants which is an excellent solution that can provide / fulfill the Enugu State Government water work power demand problems when it is implemented.

The Gas Turbine Plant Layout is made of the following main subsystems.

1. Control room and office building block
2. CNG storage station
3. Gas Powered Electric Generator Plants

GLOWSWORTH POWER PROJECTS (A DIVISION OF GLOWSWORTH ENGINEERING LTD)

Glowsworth Power Projects is committed to build a g Gas Powered Electric Generator Plant power station.

The station comprise of a Gas Powered Electric Generator

Plant fuelled by CNG or natural gas, a single shaft generator of simple open circuit.

The required Gas Powered Electric Generator Plant should normally generate 4 MW of electrical power and can be synchronized to generate more power or more if additional Gas powered electric generator plant are require, while some individual of the GE JENBACHER GAS POWERED GENERATORS can GENERATE 5MW,